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U.S. PATENT DOCUMENTS

EXAM. INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
Lan	-	5,223,409	6/29/93	Ladner et al.	455	69.7	3/1/91
		5,225,539	7/6/93	Winter	530	387 ?3	10/25/91
		5,264,563	11/23/93	Huse	-536-	-25.3	12/14/92
		5,585,089	12/17/96	Queen et al.	424	133.71	6/7/95
		5,693,762	12/2/97	Queen et al.	- 530	-387⇒ 3	6/7/95
		5,723,323	3/3/98	Kauffman et al.	_ 135	1 72, 3	12/2/94
		5,814,476	9/29/98	Kauffman et al.	43 5	69.1	6/5/95
		5,817,483	10/6/98	Kauffman et al.	43 5	69.T	6/5/95
V		5,824,514	10/20/98	Kauffman et al.	- 435	91-1	6/5/95
LAD		5,976,862	11/2/99	Kauffman et al.	-43 5	252. 3	6/5/95

FOREIGN PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)
2/10	0 451 216B1	10/16/91	European	C12P2 1	-00-	
1	0 682 040B1	11/15/95	European	CO7KI6	46.	
1	0 939 127 A2	09/01/99	European	C12 N15	13	
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orm PTO 1449 US Department of Commerce Patent	ATTY DOCKET NO:	SERIAL NO. 09/434,870
and Trademark Office	APPLICANT: Huse et al.	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: November 4, 1999	GROUP: 1643 2 0F4

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)

200		Chothia and Lesk, "Canonical structures for the hypervariable regions of immunoglobulins," \underline{J} . Mol. Biol. 196:901-917 (1987).
1		Chothia et al., "Conformations of immunoglobulin hypervariable regions," Nature 342:877-883 (1989)
	·	Foote and Winter, "Antibody framework residues affecting the conformation of the hypervariable loops," <u>J. Mol. Biol.</u> 224:487-499 (1992).
		Glaser et al., " Antibody engineering by codon-based mutagenesis in a filamentous phage vector system," <u>J. Immunology</u> 149:3903-3913 (1992).
		Jones et al., "Replacing the complementarity-determining regions in a human antibody with those from a mouse," Nature 321:522-525 (1986).
		Kabat et al., "Unusual distributions of amino acids in complementarity-determining (hypervariable) segments of heavy and light chains of immunoglobulins and their possible roles in specificity of antibody-combining sites," J. Biol. Chem. 252:6609-6616 (1977).
1		Kabat et al., "Sequences of proteins of immunological interest," (5th Ed) Washington DC: United States Department of Health and Human Services (1991). IMPRODUCTION & LEEGNERICES TO INTRODUCTION
LAN		Kristensson et al., "Humanization of a murine antibody against cryptococcus neoformans polysaccharide using a novel approach," <u>Vaccines 95</u> , 39-43 Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY (1995).

EXAMINER IIII III	DATE CONSIDERED 12/11/00

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ATTY DOCKET SERIAL NO. US Department of P-IX 3458 09/434,870 APPLICANT: Huse et al. FILING DATE:

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Commerce Patent

and Trademark

Office

Form PTO 1449

November 4, 1999

	17.77
	MacCallumm et al., "Antibody-antigen interactions: contact analysis and
164	MacCallumm et al., "Antibody-antigen interactions: contact analysis and binding site topography," <u>J. Mol. Biol.</u> 262:732-745 (1996).
	Padlan, E.A., "A possible procedure for reducing the immunogenicity of antibody variable domains while preserving their ligand-binding properties," Mol. Immunol. 28:489-498 (1991).
	Padlan, E.A., "Anatomy of the antibody molecule," Mol. Immunol. 31:169-217 (1994).
	Rader et al., "A phage display approach for rapid antibody humanization: Designed combinatorial V gene libraries," Proc. Natl. Acad. Sci. USA 95:8910-8915 (1998).
	Riechmann et al., "Reshaping human antibodies for therapy," <u>Nature</u> 332:323-327 (1988).
	Rosok et al., "A combinatorial library strategy for the rapid humanization of anticarcinoma BR96 Fab," <u>J. Biol. Chem.</u> 271:22611-22618 (1996).
	Schier et al., "Isolation of picomolar affinity anti-c-erbB-2 single-chain Fv by molecular evolution of the complementarity determining regions in the center of the antibody binding site," J. Mol. Biol. 263:551-567 (1996).
·	Schreiber and Fersht, "Energetics of protein-protein interactions: Analysis of the barnase-barstar interface by single mutations and double mutant cycles," J. Mol. Biol. 248:478-486 (1995).
Ä	Singer et al., "Optimal humanization of 1B4, an anti-CD 18 murine monoclonal antibody, is achieved by correct choice of human V-region framework sequences," <u>J. Immunol.</u> 150:2844-2857 (1993).
100	Studnicka et al., "Human-engineered monoclonal antibodies retain full specific binding activity by preserving non-CDR complementarity-modulating residues," Protein Eng. 7:805-814 (1994).

EXAMINER	-Ah (h))	DATE CONSIDERED 12/12/00

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



	ent P-IX 3458	SERIAL NO. 09/434,870	
and Trademark Office	APPLICANT: Huse et a	APPLICANT: Huse et al.	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: November 4, 1999	GROUP: 4 0F 4	

The	Thompson et al., "Affinity maturation of a high-affinity human monoclonal antibody against the third hypervariable loop of human immunodeficiency virus: Use of phage display to improve affinity and broaden strain reactivity," J. Mol. Biol. 256:77-88 (1996).
Ì	Watkins et al., "Determination of the relative affinities of antibody fragments expressed in <i>Escherichia coli</i> by enzyme-linked immunosorbent assay," Anal. Biochem. 253:37-45 (1997).
	Watkins et al., "Discovery of human antibodies to cell surface antigens by capture lift screening of phage-expressed antiboty libraries," Anal. Biochem . 256:169-177 (1998).
4	Wu et al., "Stepwise in vitro affinity maturation of Vitaxin, and $\alpha_{\nu}\beta_{3}$ -specific humanized mAb," Proc. Natl. Acad. Sci. USA 95:6037-6042 (1998).
LM	Yelton et al., "Affinity maturation of the BR96 anti-carcinoma antibody by codon-based mutagenesis," J. Immunol. 155:1994-2004 (1995).

EXAMINER	DATE CONSIDERED 17/12/00

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.